

WARM UP:

p. 131 #29

For (b) -- (d), use the Empirical Rule (not the calculator)

For (e) use the normalcdf(on the calculator

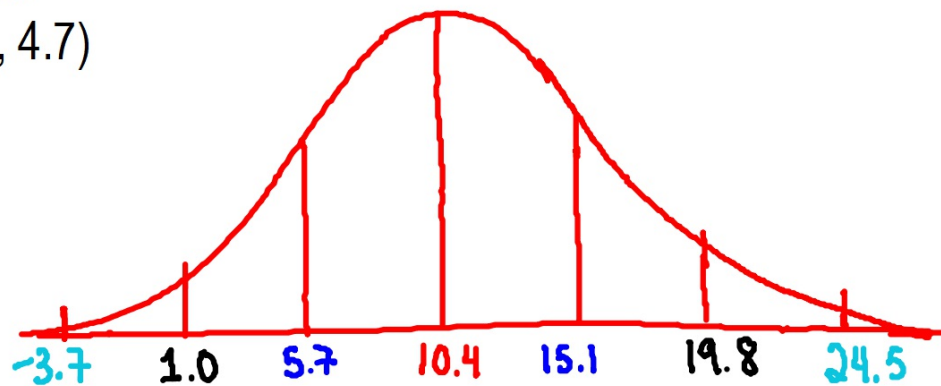
ADD:

(f) Find the diameter that has 80% of the observations above it.

(g) Find Q1 & Q3 for the diameters. Then subtract to find the IQR.

ANSWERS:

(a) $N(10.4, 4.7)$



(b) (1.0, 19.8) inches

(c) $P(X < 1.0) = 2.5\%$

(d) $P(5.7 < X < 10.4) = 34\%$

(e) $P(X > 15) = 16.386\%$

(f) $P(X > A) = 0.80$ OR $P(X < A) = 0.20$ $A = 6.44$ inches

(g) $P(X < Q1) = 0.25$

$P(X < Q3) = 0.75$

$Q1 = 7.23$ inches

$Q3 = 13.57$ inches

$IQR = 6.34$ inches

HW problems: p. 129 #1, 3, 8, 10, 12, 18, 26, 38

1) (a) median = 72 oz. IQR = 40 oz.

(b) median = 4.5 lb. (from new median) IQR = 2.5 lb.

3) (a) skewed right. mean > median

(b) between \$350 & \$950

(c) (+\$50)- changes centers

Min = \$350

Mean = \$750

Median = \$550

Range = \$1200

IQR = \$600

Q1 = \$400

SD = \$400

(d) x 1.10 (changes all)

Min = \$330

Mean = \$770

Median = \$550

Range = \$1320

IQR = \$660

Q1 = \$385

SD = \$440

8) The boy is 1.88 standard deviations BELOW the average height of American children his age.

10) mean = 100 SD = 16

$$2.5 = \frac{X - 100}{16} \quad X = 140 \text{ points}$$

12) French:

Math:

better on Math

$$Z = \frac{82 - 72}{8}$$

$$Z = \frac{86 - 68}{12}$$

Z = 1.25 std. dev's

Z = 1.5 std. dev's

18) (a) under speed limit = under 20 mph

$$Z = \frac{20 - 23.84}{3.56}$$

$Z = -1.079$ std. dev's

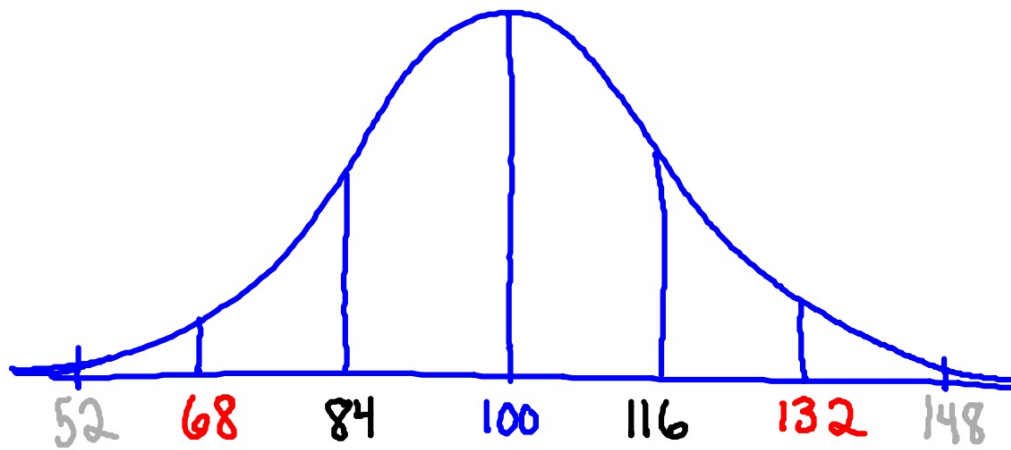
(b) 34 mph $Z = 2.85$

10 mph $Z = -3.89$

10 mph is more unusual- more
std. dev's below the mean

26) $N(100, 16)$

(a)



(b) (68, 132) points

(c) $P(X > 116) = 16\%$

(d) $P(68 < X < 84) = 13.5\%$

(e) $P(X > 132) = 2.5\%$

38) $N(100, 16)$

(a) $P(X > 80) = \text{normalcdf}(80, E99, 100, 16) = 0.8944$

(b) $P(X < 90) = \text{normalcdf}(-E99, 90, 100, 16) = 0.266$

(c) $P(112 < X < 132) = \text{normalcdf}(112, 132, 100, 16) = 0.2039$